



Nasal, pharyngeal and laryngeal endoscopy procedures during COVID-19 pandemic: available recommendations from national and international societies

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To the Editor,

The Severe Acute Respiratory Syndrome-CoronaVirus-2 (SARS-CoV-2), also known as COVID-19, pandemic is engaging clinicians around the world in an unprecedented effort to limit the viral spread and treat affected patients; the rapid diffusion of the disease represents a risk for healthcare providers who have a close contact with the upper aerodigestive tract during medical, diagnostic and surgical procedures [1].

Available evidence from China, Iran, Italy and United States [2, 3] suggests that otolaryngology specialists have a considerably high risk of contracting COVID-19 infection due to diagnostic or surgical aerosol-generating procedures (e.g. laryngeal endoscopy), as well as during head and neck emergency or surgical procedures [4, 5].

Nasal, pharynx and laryngeal endoscopy represents a high-risk procedure for otolaryngologists as it is commonly used in routine diagnostics, requires a short physical distance between patients and personnel, and can induce sneezing and coughing with consequent potential virus transmission

through droplets, contact transmission and aerosol transmission especially in cases of long exposure to high concentrations of aerosols in closed environments [2, 5].

For this reason, recommendations for nasal, pharynx and laryngeal endoscopy during COVID-19 pandemic have been published by national and international otolaryngology and head and neck surgery societies.

We conducted a review of the recent literature on endoscopic otolaryngology procedures during COVID-19 pandemic and evaluated available data published until April 15, 2020.

Sixty-six societies have been identified and 27 (40.9%) of them published information and recommendations regarding nasal, pharyngeal and laryngeal endoscopy procedures during COVID-19 pandemic (Table 1). The majority of societies (24 societies—88.9%) suggested to perform endoscopy procedures only if strictly necessary; one (3.7%) recommended to avoid flexible endoscopy in all cases. Among them, the ENT UK at The Royal College of Surgeons of England suggested to consider whether to use or avoid topical decongestant and local anesthetic solution to reduce chances of sneezing and coughing during examination [6].

There is a lack of consensus about whether flexible or rigid endoscope should be used, while all societies recommended performing endoscopy using a monitor without directly viewing through the eyepiece.

All national and international societies recommended the rational use of personal protective equipment (PPE) during the diagnostic procedures such as disposable gowns, gloves, FFP2 or N95 respirators and surgical masks, and eye protection (goggles or face shield), based on the experience of health care systems in Asia and Europe [1]; endoscopy staff should be protected against infectious material during the endoscopic procedure as well as against direct contact with contaminated equipment or potentially harmful chemicals during the sterilization procedures [7]. Furthermore,

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Table 1 International/National Societies of Otolaryngology and Head and Neck Surgery that published information about nasal, pharyngeal and laryngeal endoscopy during COVID-19 pandemic

Society; country	Website (as of April 15, 2020)
Confederation of European Otorhinolaryngology—Head and Neck Surgery; Europe	https://www.ceorlhns.org/covid-19/ceorlhns-statement
European Laryngology Society; Europe	https://www.elsoc.org
European Rhinologic Society; Europe	https://www.europeanrhinologicsociety.org/?page_id=2143
European Society of Pediatric Otorhinolaryngology (ESPO); Europe	https://www.espo.eu.com/news/covid-19-information/
Royal Belgian Society of Oto-Rhino-Laryngology, Head and Neck Surgery; Belgium	https://orl-nko.be/nl/covid-19
Bulgarian Rhinologic Society; Bulgaria	https://www.bulgarianrhinologicsociety.org
Czech Society of Otorhinolaryngology and Head and Neck Surgery; Czech Republic	https://www.otorinolaryngologie.cz
Dansk Society of Otorhinolaryngology, Head and Neck Surgery; Denmark	https://dsogh.dk
ENT UK at The Royal College of Surgeons of England; England	https://www.entuk.org/sites/default/files/Nasal%20endoscopy%20and%20laryngoscopy%20examination%20of%20ENT%20patients_compressed%20%281%29.pdf
Société Française d'Oto-Rhino-Laryngologie et de Chirurgie de la Face et du Cou, France	https://www.sforl.org/wp-content/uploads/2020/04/Arbre-decisionnelle-COVID-pour-ORL-V10-002.pdf
Association Française d'ORL Pédiatrique (AFOP); France	https://www.sforl.org/wp-content/uploads/2020/04/AFOP-SFORL-COVID-19.pdf
Società Italiana di Otorinolaringoiatria e Chirurgia Cervico Facciale; Italy	https://www.sioechcf.it/news-covid-19/
Società Italiana di Otorinolaringologia Pediatrica, Italy	https://www.sio-p.it/eventi/36-covid19.html
Società Italiana del Basicranio; Italy	https://www.societabasicranio.it
Norsk Forening for Otorhinolaryngologi; Norway	https://www.legeforeningen.no
Serbian Head and Neck Society; Serbia	https://www.sld.org.rs/
Slovenská Spoločnosť pre Otorinolaryngológiu a Chirurgiu Hlavy a Krku; Slovak Republic	https://www.sso.sk
Sociedad Española de Otorrinolaringología y Cirugía de Cabeza y Cuello; Spain	https://seorl.net/posicionamiento-de-la-seorl-ccc-sobre-la-pandemia-de-coronavirus/
Schweizerische Gesellschaft für Oto-Rhino-Laryngologie, Hals- und Gesichtschirurgie; Switzerland	https://www.orl-hno.ch/covid-19.html
Canadian Society of Otolaryngology—Head and Neck Surgery; Canada	https://www.entcanada.org/news-events/covid-19-alerts/
American Academy of Otolaryngology Head and Neck Surgery, United States of America	https://www.entnet.org/content/coronavirus-disease-2019-resources
North America Skull Base Society; United States of America	https://www.nasbs.org
Federación Argentina de Sociedades de Otorrinolaringología; Argentina	https://faso.org.ar/recomendaciones.asp
Associação Brasileira de Otorrinolaringologia e Cirurgia Cérvico-Facial; Brasile	https://www.aborlccf.org.br/secao_detalhes.asp?s=51&id=5946
The Australian Society of Otolaryngology—Head and Neck Surgery; Australia	https://www.asohns.org.au
Philippine Society of Otolaryngology Head and Neck Surgery; Philippine	https://pso-hns.org/2020/03/22/endoscopy-guidelines-during-covid-19-pandemic/
The South African Society of Otorhinolaryngology Head and Neck Surgery; South Africa	https://docs.mymembership.co.za/docmanager/41bfc900-b208-47bb-8517-69aa8219597e/00149202.pdf

removal of PPE is a high-risk task and great care must be taken not to contaminate self or others during this process [1]. No society recommended adopting post-exposure prophylaxis in physician or in healthcare workers.

All international societies encouraged to follow standardized sterilization procedures for endoscopes [8]. Sterilization should always be performed immediately after finishing the procedure; the disinfection and reprocessing of the

endoscope and instruments used for a patient with COVID-19 are similar to those used in standard practice [9].

Although the COVID-19 situation is evolving fast and these society statements are subject to change over time, we suggest following these recommendations about execution, sterilization and personal protection for endoscopy procedures during COVID-19 pandemic for all healthcare workers in otolaryngology units.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Research involving human participants and/or animals Not applicable.

Informed consent Not applicable.

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